Windows®. Life without Walls™.
Fujitsu recommends Windows 7.

# Data Sheet
# Fujitsu CELSIUS M470 Workstation

## Your new "thoroughbred" workstation

If you're looking for reliable performance when using demanding applications, the Fujitsu CELSIUS M470 single-processor workstation meets your needs. It can be individually configured, helping you to enhance your productivity. It features best-in-class noise emissions of only 23 dB for a quiet and efficient working environment. Comprehensive ISV certifications ensure your applications run smoothly. Finally, an integrated display gives you continuous control over system status.

**Performance**
Higher productivity
- High performance multi-core processors, hard disk drives and next generation graphics subsystems

**Ergonomics**
Quiet system for a pleasant working environment
- Optimized thermal management, low-noise chassis and silent fans

**Reliability**
System stability for the complete lifecycle
- High product standards thanks to top-quality components and comprehensive testing in certified in-house laboratories for 24/7 operation

**Certification of workstation applications**
Stability, compatibility and performance for the main workstation applications
- Comprehensive support for ISV applications and ease of integration into existing IT networks

**Expandability**
Excellent expandability for future demands
- Increased memory capacities of up to 48 GB

Windows®. Life without Walls™.
Fujitsu recommends Windows 7.

# Components

| | |
|---|---|
| **Processor** | Intel® Xeon® processor X5690 (6 Cores / 12 Threads, 3.46 GHz, 12 MB) |
| | Intel® Xeon® processor X5687 (4 Cores / 8 Threads, 3.60 GHz, 12 MB) |
| | Intel® Xeon® processor X5680 (6 Cores / 12 Threads, 3.33 GHz, 12 MB, 6.4 GT/s) |
| | Intel® Xeon® processor X5677 (4 Cores / 8 Threads, 3.46 GHz, 12 MB, 6.4 GT/s) |
| | Intel® Xeon® processor X5675 (6 Cores / 12 Threads, 3.06 GHz, 12 MB) |
| | Intel® Xeon® processor X5672 (4 Cores / 8 Threads, 3.20 GHz, 12 MB) |
| | Intel® Xeon® processor X5670 (6 Cores / 12 Threads, 2.93 GHz, 12 MB, 6.4 GT/s) |
| | Intel® Xeon® processor X5667 (4 Cores / 8 Threads, 3.06 GHz, 12 MB, 6.4 GT/s) |
| | Intel® Xeon® processor X5660 (6 Cores / 12 Threads, 2.80 GHz, 12 MB, 6.4 GT/s) |
| | Intel® Xeon® processor X5650 (6 Cores / 12 Threads, 2.66 GHz, 12 MB, 6.4 GT/s) |
| | Intel® Xeon® processor W3690 (6 Cores / 12 Threads, 3.46 GHz, 12 MB) |
| | Intel® Xeon® processor W3670 (6 Cores / 12 Threads, 3.20 GHz, 12 MB) |
| | Intel® Xeon® processor W3565 (4 Cores / 8 Threads, 3.20 GHz, 8 MB, 4.8 GT/s) |
| | Intel® Xeon® processor W3550 (4 Cores / 8 Threads, 3.06 GHz, 8 MB, 4.8 GT/s) |
| | Intel® Xeon® processor W3530 (4 Cores / 8 Threads, 2.80 GHz, 8 MB, 4.8 GT/s) |
| | Intel® Xeon® processor W3520 (4 Cores / 8 Threads, 2.66 GHz, 8 MB, 4.8 GT/s) |
| | Intel® Xeon® processor W3505 (2 Cores / 4 Threads, 2.53 GHz, 4 MB, 4.8 GT/s) |
| | Intel® Xeon® processor W3503 (2 Cores / 4 Threads, 2.5 GHz, 4 MB, 4.8 GT/s) |
| | Intel® Xeon® processor L5640 (6 Cores / 12 Threads, 2.26 GHz, 12 MB, 5.86 GT/s) |
| | Intel® Xeon® processor L5630 (4 Cores / 8 Threads, 2.13 GHz, 12 MB, 5.86 GT/s) |
| | Intel® Xeon® processor L5609 (4 Cores / 8 Threads, 1.86 GHz, 12 MB) |
| | Intel® Xeon® processor E5649 (6 Cores / 12 Threads, 2.53 GHz, 12 MB) |
| | Intel® Xeon® processor E5647 (4 Cores / 8 Threads, 2.93 GHz, 12 MB) |
| | Intel® Xeon® processor E5645 (6 Cores / 12 Threads, 2.40 GHz, 12 MB) |
| | Intel® Xeon® processor E5640 (4 Cores / 8 Threads, 2.66 GHz, 12 MB, 5.86 GT/s) |
| | Intel® Xeon® processor E5630 (4 Cores / 8 Threads, 2.53 GHz, 12 MB, 5.86 GT/s) |
| | Intel® Xeon® processor E5620 (4 Cores / 8 Threads, 2.40 GHz, 12 MB, 5.86 GT/s) |
| | Intel® Xeon® processor E5607 (4 Cores / 8 Threads, 2.26 GHz, 8 MB) |
| | Intel® Xeon® processor E5606 (4 Cores / 8 Threads, 2.13 GHz, 8 MB) |
| | Intel® Xeon® processor E5603 (4 Cores / 8 Threads, 1.60 GHz, 8 MB) |
| **Operating system** | |
| **Operating system** | Genuine Windows® 7 Professional 64-bit<br>Genuine Windows® 7 Professional 32-bit |
| **Operating system compatible** | Genuine Windows® XP Professional x64 Edition<br>Genuine Windows® XP Professional<br>Linux |
| **Operating system notes** | Red Hat® certification<br>Novell® certification<br>For some configurations third party drivers are currently not available or configuration restrictions may apply. |
| **Memory modules** | 1 GB (1 module(s) 1 GB) DDR3, 1333 MHz, PC3-10600 |
| | 1 GB (1 module(s) 1 GB) DDR3, ECC, 1333 MHz, PC3-10600 |
| | 2 GB (1 module(s) 2 GB) DDR3, ECC, 1333 MHz, PC3-10600 |
| | 4 GB (1 module(s) 4 GB) DDR3, ECC, 1333 MHz, PC3-10600 |
| | 8 GB (1 module(s) 8 GB) DDR3, unbuffered, ECC, 1333 MHz, PC3-10600, DIMM |

| | |
|---|---|
| **Graphics add on cards (optional)** | Ultra-high-end 3D: NVIDIA® Quadro® 5000, 2.5 GB, 352 cores, PCIe x16, DL-DVI-I, 2x DP, DVI, VGA |
| | High-end 3D: ATI FirePro™ V7900, 2 GB, 1140 stream processors, PCIe x16, 4 x DP |
| | High-end 3D: ATI FirePro™ V7800, 2 GB, 1140 stream processors, PCIe x16, DL-DVI-I, 2x DP |
| | High-end 3D: NVIDIA® Quadro® 4000, 2 GB, 256 cores, PCIe x16, DL-DVI-I, 2x DP |
| | Midrange 3D: ATI FirePro™ V5800, 1 GB, 800 stream processors, PCIe x16, DL-DVI-I, 2x DP |
| | Midrange 3D: NVIDIA® Quadro® 2000D, 1 GB, 192 cores, PCIe x16, 2x DL-DVI-I |
| | Midrange 3D: NVIDIA® Quadro® 2000, 1 GB, 192 cores, PCIe x16, DL-DVI-I, 2x DP |
| | Midrange 3D: ATI FirePro™ V5900, 2 GB, 800 stream processors, PCIe x16, DL-DVI-I, 2x DP |
| | Entry 3D: ATI FirePro™ V4800, 1 GB, 400 stream processors, PCIe x16, DL-DVI-I, 2x DP |
| | Entry 3D: NVIDIA® Quadro® 600, 1 GB, 96 cores, PCIe x16, DL-DVI-I, DP |
| | Entry 3D: NVIDIA® Quadro® 400 , 512 MB, 48 cores, PCIe x16, 1x DVI-I, DP |
| | Entry 3D: ATI FirePro™ V3800, 512 MB, 400 stream processors, PCIe x16, DL-DVI-I, DP |
| | Entry 3D: NVIDIA® Quadro® FX 380, 256 MB, 16 cores, PCIe x16, 2x DL-DVI-I |
| | Professional 2D: NVIDIA® Quadro® NVS 450, 512 MB, 2 x 8 cores, PCIe x16, 4 x DP |
| | Professional 2D: NVIDIA® Quadro® NVS 300, 512 MB, 16 cores, PCIe Gen2 x16, 2x DVI/VGA |
| | Professional 2D: NVIDIA® Quadro® NVS 295, 256 MB, 8 Cores, PCIe x16, 2x DP |
| | Professional 2D: NVIDIA® Quadro® NVS 290, 256 MB, 16 cores, PCIe x16, 2x SL DVI-I |
| | Multi monitor 2D: NVIDIA® Quadro® NVS 295, 256 MB, 8 Cores, PCIe x1, 2x DP |
| | Remote Graphics: CELSIUS RemoteAccess Card, PCIe x1, 2x DVI-I |
| **Hard disk drives (internal)** | SSD SATA, 256 GB, 2.5-inch |
| | SSD SATA, 128 GB, 2.5-inch |
| | HDD SATA III, 10000 rpm, 600 GB, 3.5-inch internal |
| | HDD SATA III, 10000 rpm, 300 GB, 2.5-inch |
| | HDD SATA III, 7200 rpm, 1000 GB, 3.5-inch, business critical |
| | HDD SATA III, 7200 rpm, 500 GB, 3.5-inch, business critical |
| | HDD SATA II, 10000 rpm, 150 GB, 2.5-inch, S.M.A.R.T. |
| | HDD SATA II, 7200 rpm, 2000 GB, 3.5-inch, business critical |
| | HDD SATA II, 7200 rpm, 1000 GB, 3.5-inch, S.M.A.R.T. |
| | HDD SATA II, 7200 rpm, 500 GB, 3.5-inch, S.M.A.R.T. |
| | HDD SATA II, 7200 rpm, 320 GB, 3.5-inch, S.M.A.R.T. |
| | HDD SATA II, 7200 rpm, 160 GB, 3.5-inch, S.M.A.R.T. |
| | HDD SAS, 15000 rpm, 600 GB, 3.5-inch internal |
| | HDD SAS, 15000 rpm, 450 GB, 3.5-inch |
| | HDD SAS, 15000 rpm, 300 GB, 3.5-inch |
| | 512 GB, 2.5-inch |
| **Hard disk notes** | 2.5-inch drives will be mounted in the 3.5-inch bays<br>One Gigabyte equals one billion bytes, when referring to hard disk drive capacity. |
| **Drives (optional)** | Blu-ray Disc™ Triple Writer |
| | DVD-ROM |
| | DVD Super Multi |
| | MultiCard Reader 20in1, 5.25-Inch |
| | MultiCard Reader 20in1 USB 2.0 5.25-Inch |
| **Interface add on cards/components (optional)** | |
| | WLAN III, 802.11g/Draft-n (Windows only) |
| | USB 3.0 PCIe x1 |
| | Parallel Interface |
| | Gigabit Ethernet PCIe x1 |
| | eSATA Interface |
| | Dual serial card PCI |
| | Dual 1 Gigabit Ethernet PCIe x4 |
| | Dual 10 Gigabit Ethernet PCIe x8 |

| Base unit | CELSIUS M470-2 | CELSIUS M470-2 POWER |
|---|---|---|
| **Mainboard** | | |
| Mainboard type | D2778 | |
| Formfactor | ATX | |
| Chipset | Intel® X58 Express, Intel® 82801JR ICH10R | |
| Processor socket | LGA 1366 | |
| Processor quantity maximum | 1 | |
| Memory slots | 6 DIMM | |
| Supported capacity RAM (max.) | 48 GB | |
| Memory notes | In configurations with 4 GB and more the visible memory may be reduced to approximately 3.5 GB or less (for 32-bit operating systems) and configurations with 8 GB the visible memory may be reduced to approximately 7.5 GB or less (depending on system configuration). | |
| LAN | Built-in 10/100/1000 MBit/s Realtek RTL8111 | |
| Audio codec | Realtek ALC663 | |
| Audio features | High Definition Audio | |
| **I/O controller on board** | | |
| Serial ATA total | 6 | |
| SATA RAID support | 0, 1, 10, 5 | |
| **Interfaces** | | |
| Audio: in (rear) | 1 | |
| Audio: out / SPDIF (rear) | 2 / 1 | |
| Audio: in | 1 | |
| Audio: out | 1 | |
| FireWire (IEEE1394) (front) | 1 | |
| FireWire (IEEE1394) (rear) | 1 | |
| Internal speakers | 1 | |
| USB 2.0 total | 11 | |
| USB front | 2 | |
| USB rear | 6 | |
| USB internal | 3, thereof 1 type A | |
| Serial (RS-232) | 1 | |
| Mouse / Keyboard (PS/2) | 1 / 1 | |
| Ethernet (RJ-45) | 1 | |
| Interface Module notes | Anytime USB charge functionality | |
| **Drive bays** | | |
| Drive bays total | 7 | |
| 3.5-inch internal bays | 4 | |
| 5.25-inch external bays | 3 | |
| **Slots** | | |
| PCI-Express 2.0 x16 | 2 x (312 mm) Full height | |
| PCI-Express 1.0 x4 (mech. x8) | 1 x (312 mm) Full height | |
| PCI-Express 2.0 x4 (mech. x8) | 1 x (312 mm) Full height | |
| PCI (32-bit / 33 MHz) | 2 x (312 mm) Full height | |
| **Electrical values** | | |
| Power consumption note | 190 W depending on configuration | 190 W depending on configuration |
| Rated voltage range | 100 V - 240 V | 100 V - 240 V |
| Rated frequency range | 50 Hz - 60 Hz | 50 Hz - 60 Hz |
| Max. output of single power supply | 500 W up to 85% efficiency | 700 W up to 85% efficiency |
| **Noise for standard configuration (HDD, ODD, FDD)** | | |
| Noise emission | According to ISO9296 (LpAm at bystander position) | According to ISO9296 (LpAm at bystander position) |
| Idle mode | 23 dB(A) | 23 dB(A) |

| | | |
|---|---|---|
| **Noise for standard configuration (HDD, ODD, FDD)** | | |
| **Office mode** | 23 dB(A) | 23 dB(A) |
| **Noise notes / description** | depending on configuration | depending on configuration |
| **Dimensions / Weight / Environmental** | | |
| **Dimensions (W x D x H)** | 215 x 522 x 446 mm | |
| **Operating position** | Vertical / horizontal | |
| **Weight** | 18 kg | |
| **Weight notes** | Actual weight may vary depending on configuration | |
| **Operating ambient temperature** | 15 - 35°C | |
| **Operating relative humidity** | 10 - 75 % | |
| **Compliance** | | |
| **Product** | CELSIUS M470-2 | CELSIUS M470-2 POWER |
| **Model** | MCS-D2778 | |
| **Germany** | GS<br>depending on configuration<br>Blauer Engel / Blue Angel | GS<br>depending on configuration |
| **Europe** | CE | |
| **USA/Canada** | cCSAus<br>FCC Class B | |
| **Global** | RoHS (EU & China)<br>ENERGY STAR® 5.0<br>Medical EMC standard IEC60601-1-2 in combination with medical kit | |
| **China** | CCC | |
| **Compliance link** | https://sp.ts.fujitsu.com/sites/certificates/default.aspx | |
| **Security** | | |
| **System protection** | Kensington Lock support<br>Eye for padlock<br>Seal option<br>Intrusion switch<br>Optional: Integrated cabinet lock | |
| **Audit proof protection** | Write protect option for the Flash EPROM<br>Boot protection for floppy disk / CD drive and write protection for floppy disk drive<br>Dynamic USB security for full hardware USB protection<br>Control of all USB interfaces<br>External USB interfaces detachable separately<br>Embedded security (TPM 1.2) - Infineon | |
| **Access protection** | Optional: Access protection via internal SmartCard reader<br>User and supervisor BIOS password<br>Optional: SmartCase Logon+ | |
| **Additional Software** | | |
| **Additional software (optional)** | Drivers & Utilities DVD (DUDVD) Windows® 7 & Vista & XP<br>CyberLink PowerDVD 9<br>Nero 9 Essentials XL<br>Recovery DVD (Windows® 7)<br>Windows® XP 64 downgrade pack<br>Windows® XP 32 downgrade pack | |
| | Keyboard on (Special Fujitsu keyboard required)<br>Thermal management | Keyboard on (Special Fujitsu keyboard required)<br>Thermal management |
| **Spare part availability** | 5 years | 5 years |
| **Manageability** | | |
| **Manageability technology** | DeskUpdate Driver management | |
| **Manageability software** | DeskView 10.x client management including:<br>DASH 1.1 remote system management | |

## Manageability

| | |
|---|---|
| **DeskView components** | On/Offline remote client management<br>Detailed system inventory management and reports<br>BIOS Management<br>Remote power management<br>System notifications<br>Security Remote Control<br>DeskView Helpdesk Integration |
| **Supported standards** | WMI<br>BootP (made4you)<br>PXE<br>WoL (Wake on LAN) |
| **Manageability link** | http://ts.fujitsu.com/manageability |

## Input device / components

| | |
|---|---|
| | Optical USB tilt wheel mouse |
| **Input devices (optional)** | Optical USB/PS2 tilt wheel mouse<br>Space Explorer USB<br>Space Navigator USB<br>Space Pilot USB<br>Keyboard |

## Warranty

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|---|---|
| **Standard Warranty** | 3 years (depending on country) |
| **Service level** | On-site Service (depending on country) |

## Maintenance and Support Services - the perfect extension

| | |
|---|---|
| **Recommended Service** | 5x9, Response Time: Next Business Day |
| **Service Weblink** | http://ts.fujitsu.com/Supportservice |

# More information

## Fujitsu platform solutions

In addition to Fujitsu CELSIUS M470, Fujitsu provides a range of platform solutions. They combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships.

**Dynamic Infrastructures**
With the Fujitsu Dynamic Infrastructures approach, Fujitsu offers a full portfolio of IT products, solutions and services, ranging from clients to datacenter solutions, Managed Infrastructure and Infrastructure as-a-Service. How much you benefit from Fujitsu technologies and services depends on the level of cooperation you choose. This takes IT flexibility and efficiency to the next level.

**Computing Products**
www.fujitsu.com/global/services/computing/

**Software**
www.fujitsu.com/software/

## More information

Learn more about Fujitsu CELSIUS M470, please contact your Fujitsu sales representative or Fujitsu Business partner, or visit our website.
http://ts.fujitsu.com/celsius

## Fujitsu green policy innovation

Fujitsu Green Policy Innovation is our worldwide project for reducing burdens on the environment.
Using our global know-how, we aim to resolve issues of environmental energy efficiency through IT.
Please find further information at http://www.fujitsu.com/global/about/environment/

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